REMARKS

This response is intended as a full and complete response to the non-final Office Action mailed November 28, 2005. In the Office Action, the Examiner notes that claims 4-6, 10-12 and 16-23 are and rejected. By this response, Applicants have amended claims 4-5, 10-11, 16-17, and 19-22.

In view of both the amendments presented above and the following discussion, Applicants submit that none of the claims now pending in the application are obvious under the provisions of 35 U.S.C. §103.

It is to be understood that Applicants, by amending the claims, do not acquiesce to the Examiner's characterizations of the art of record or to Applicants' subject matter recited in the pending claims. Further, Applicants are not acquiescing to the Examiner's statements as to the applicability of the art of record to the pending claims by filing the instant responsive amendments.

REJECTIONS

35 U.S.C. §103(a)

Claims 4-6, 10-12, and 16-23

The Examiner has rejected claims 4-6, 10-12, and 16-23 under 35 U.S.C. §103(a) as being unpatentable over Goffin, II (US006918135B1, hereinafter "Goffin") in view of Gotwald (U.S. 005987518A, hereinafter "Gotwald"), Banker et al. (US005497187A, hereinafter "Banker") and Addington (US006928656B, hereinafter "Addington"). Applicants respectfully traverse the rejection.

Applicants' independent claim 4 recites:

> In a digital video television communication system having a headend coupled to a two-way communication medium and at least one digital video settop box coupled to said two-way communication medium, said headend transmitting on a plurality of communication channels including first and second in-band video channels and an out-of-band region having at least one out-of-band communication channel, said first in-band video channel having a first plurality of multiplexed digital video channels, said second in-band video channel having a second plurality of multiplexed digital video channels, <u>one of said multiplexed digital video</u>

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channels in said first in-band video channel associated with an IP
connection, a method of operation comprising:

sending a channel resource request from said settop box to said
headend, said channel resource request representing a channel change at
said settop box from said one of the multiplexed digital video channels in
said first in-band video channel to one of the multiplexed digital video
channels in said second in-band video channel, said channel resource
request for changing the IP connection association from said one of the
multiplexed digital video channels in said first in-band video channel to
said one of the multiplexed digital video channels in said second in-band
video channel;

determining whether said second in-band video channel has an
available communication channel for transporting IP data of the IP
connection in said second in-band video channel using IP over MPEG
data packets;

selecting a communication channel at said headend by selecting
one of:

said available communication channel if said second in-band
video channel has the available communication channel for transporting
the IP data in said second in-band video channel; and

one of the at least one out-of-band communication channel if
said second in-band video channel does not have the available
communication channel for transporting the IP data in said second in-band
video channel;

sending a channel resource confirmation message from said
headend to said settop box, said channel resource confirmation message
identifying said selected communication channel; and

selecting said selected communication channel at said settop box
for receiving the IP data from said headend.

[Emphasis added.]

As admitted by the Examiner, Goffin fails to teach or suggest determining

whether a second video channel has an available communication channel (or

available capacity) for supporting an IP connection, selecting an OOB channel if the

second video channel does not have an available communication channel, and

transporting IP data using the OOB channel if the second video channel does not

have an available communication channel, as set forth in claim 4. (Office Action,

Page 3 – 4). Furthermore, Goffin is completely devoid of any teaching or

suggestion of a channel resource request adapted for changing an association of

one of the multiplexed digital video channels in a first in-band video channel with

an IP connection to an association of one of the multiplexed digital video

channels in a second in-band video channel with the IP connection, as set forth

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in claim 4. Moreover, Gotwald, Banker, and Addington, alone or in combination, fail to bridge the substantial gap between Goffin and Applicants' invention.

In general, Gotwald teaches a system for communicating IP data on in-band MPEG video channels. As taught in Gotwald, transport of IP data over an in-band MPEG channel is performed by reformatting the IP protocol to fit within the MPEG-2 transport protocol. As such, Gotwald teaches that IP data is transmitted in-band using the MPEG-2 protocol. Gotwald, however, is completely devoid of any teaching or suggestion of any association of one of a plurality of multiplexed digital video channels in an in-band video channel with an IP connection. As such, Gotwald is completely devoid of any teaching or suggestion of a channel resource request adapted for changing an association of one of the multiplexed digital video channels in a first in-band video channel with an IP connection to an association of one of the multiplexed digital video channels in a second in-band video channel with the IP connection, as set forth in claim 4.

Furthermore, Gotwald is completely devoid of any teaching or suggestion of any out-of-band transmission whatsoever, much less transmission of IP data using an out-of-band channel. As such, since Gotwald is completely devoid of any teaching or suggestion of at least the limitations of determining whether a second in-band video channel has an available communication channel for transporting IP data of an IP connection in the second in-band video channel using IP over MPEG data packets, Gotwald must also be completely devoid of any teaching or suggestion of selecting a communication channel at said headend by selecting one of an in-band video channel or an out-of-band communication channel, as set forth in claim 4.

In general, Addington discloses a method for delivery of IP data over MPEG-2 transport networks. Addington, however, fails to teach or suggest any association of one of a plurality of multiplexed digital video channels in an in-band video channel with an IP connection. As such, Addington does not and cannot teach or suggest a channel resource request for changing the IP connection association from one of the multiplexed digital video channels in a first in-band video channel

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to one of the multiplexed digital video channels in a second in-band video channel, as set forth in claim 4.

Furthermore, although Addington discloses use of an out-of-band channel for transporting IP data, Addington is completely devoid of any teaching or suggestion of determining whether an in-band video channel has an available communication channel for supporting an IP connection and selecting one of an in-band video channel or an out-of-band communication channel according to the determination as to whether the in-band video channel has the available communication channel for supporting the IP connection. Rather, the Examiner cites Banker for teaching such limitations of Applicants' invention of claim 4. Applicants maintain, however, that Banker fails to teach or suggest such limitations of claim 4.

In general, Banker teaches the use of in-band audio, in-band video, and out-of-band signals for transmitting data in a television system. (Banker, Abstract). In the Office Action, the Examiner cites a specific portion of Banker for teaching the selection of one of an available communications channel in a second in-band video channel or an out-of-band channel for data transmission. (Office Action, pg. 4-5). The cited portion of Banker, however, merely teaches that selection between transmission over in-band and out-of-band channels is performed according to queue occupancy. In particular, Banker specifically teaches that the "headend controller 130, for example, may determine that the queue for outgoing in-band data transactions is so great that out-of-band data transmission is a more expedient mode of transmission...a scrambler or data inserter may meet with a similar full queue or other situation in which the data transaction is urgent...." (Banker, Col. 8, Lines 8-10, Emphasis added).

In other words, as taught in Banker, out-of-band transmission is not used when a communication channel is available in the in-band channel for transporting data. Rather, as taught in Banker, out-of-band transmission is used in response to large queue delays when a data transaction is urgent. Banker teaches that as video data is buffered waiting for downstream transmission in an in-band channel, other data may be transmitted using out-of-band transmission for ensuring that the other data is transmitted more expediently. The transmission of data over an out-of-band

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channel based on queue occupancy or data urgency, as taught in Banker, is not selection of an out-of-band communication channel in response to a determination that an in-band video channel does not have an available communication channel for transporting IP data with the multiplexed digital video signals transmitted in the second in-band video channel, as set forth in claim 4. The delay experienced by video signals transmitted using an in-band channel has nothing to do with whether or not there is a communication channel available for transmitting other data signals using the in-band channel.

Furthermore, since Banker merely transmits the other data using the most expedient communication path, Banker merely teaches a system in which IP data is transmitted independent of a video channel or associated video data transmission (since the video data is awaiting transmission in a buffer as other data is send over an out-of-band channel). Banker is completely devoid of any teaching or suggestion of any association between one of a plurality of multiplexed digital video channels in a first in-band video channel and an IP connection. As such, Banker does not and cannot not teach or suggest changing an IP connection association from one of the multiplexed digital video channels in the first in-band video channel to one of a plurality of multiplexed digital video channels in a second in-band video channel, as set forth in claim 4.

As claimed in Applicants' invention of at least claim 4, one of a plurality of multiplexed digital video channels in a first in-band video channel is associated with an IP connection. Furthermore, as set forth in claim 4, a resource request representing the channel change from one of the multiplexed digital video channels in the first in-band video channel to one of the multiplexed digital video channels in the second in-band video channel is adapted for changing the IP connection association from said one of the multiplexed digital video channels in said first in-band video channel to said one of the multiplexed digital video channels in said second in-band video channel, as set forth in claim 4. As such, Applicants' invention enables an association between a currently selected in-band video channel and an IP connection to be maintained such that the IP connection tracks the in-band video channel change.

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By contrast, as described herein, Banker is completely devoid of any teaching or suggestion of any association between a video channel and a data connection, much less an association between a video channel and an IP connection. Rather, Banker is merely directed towards expedient transmission of data. In fact, since Banker is directed toward expedient transmission of other data independent of transmission of video data, the Banker system simply cannot maintain an association between an in-band video channel and an IP connection. As such, not only does Banker fail to teach or suggest any association between an in-band video channel and an IP connection, Banker actually teaches away from Applicants' invention of at least claim 4 in which an association between a selected channel and an IP connection is maintained. Thus, Goffin, Gotwald, Banker, and Addington, alone or in combination, fail to teach or suggest Applicants' invention, as a whole.

Furthermore, for at least the reasons discussed herein, even if the cited references could be combined as the Examiner suggests, the combination of the references does not result in Applicants' claimed invention. As described herein, Goffin teaches a television communication system having in-band and out-of-band channels, Gotwald teaches communication of IP data over a broadband MPEG channel (but fails to teach or suggest out-of-band communication), Addington teaches transmission of IP data using in-band or out-of-band channels, and Banker teaches that data may be transmitted over an out-of-band channel if the occupancy of the queue associated with an in-band channel is such that out-of-band transmission is more expedient. Thus, the combination of Goffin, Gotwald, Addington, and Banker merely teaches a television system in which IP data may be transported using MPEG over an in-band channel or an out-of-band channel depending upon the occupancy of a queue associated with the in-band channel.

The combination, however, is completely devoid of any teaching or suggestion of maintaining an association between a selected video channel and an IP connection, as set forth at least in claim 4, by determining whether a second in-band video channel has an available communication channel for supporting an IP connection originally associated with a first in-band video channel. Furthermore, the

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combination is completely devoid of any teaching or suggestion of selecting one of the second in-band video channel or an out-of-band channel for supporting the IP connection depending upon the determination as to whether the second in-band video channel has the available communication channel. Rather, Banker is clearly concerned with expediency of data transmission, not maintaining tracking between the data connection and a video channel, as set forth in claim 4. Thus, Applicants respectfully submit that Goffin, Gotwald, Banker and Addington, alone or in combination, fail to teach or suggest Applicants' invention, as a whole.

The test under 35 U.S.C. §103 is not whether an improvement or a use set forth in a patent would have been obvious or non-obvious; rather the test is whether the claimed invention, considered as a whole, would have been obvious. Jones v. Hardy, 110 USPQ 1021, 1024 (Fed. Cir. 1984) (emphasis added). Moreover, the invention as a whole is not restricted to the specific subject matter claimed, but also embraces its properties and the problem it solves. In re Wright, 6 USPQ 2d 1959, 1961 (Fed. Cir. 1988) (emphasis added). Goffin, Gotwald, Banker and Addington, alone or in combination, fail to teach or suggest the Applicants' invention as a whole.

As such, Applicants submit that independent claim 4 is non-obvious over Goffin in view of Gotwald, Banker and Addington under 35 U.S.C. §103(a) and is patentable thereunder. Furthermore, Applicants' independent claims 10, 16, and 19-21 recite features similar to the relevant features recited in independent claim 4. Thus, Applicants submit that claims 10, 16, and 19-21 are also non-obvious over Goffin in view of Gotwald, Banker and Addington under 35 U.S.C. §103(a) and are patentable thereunder.

Furthermore, claims 5-6, 11-12, 17-18, and 22-23 depend, either directly or indirectly, from independent claims 4, 10, 16, and 21, respectively, and recite additional features therefor. As such, and for at least the same reasons discussed above, Applicants submit that these dependent claims are also non-obvious over Goffin in view of Gotwald, Banker and Addington under 35 U.S.C. §103 and are patentable thereunder. Therefore, the Applicants respectfully request that the rejections be withdrawn.

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CONCLUSION

Thus, Applicants submit that the claims are in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited. If, however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending in the application, it is requested that the Examiner telephone Michael Bentley at (732) 383-1434 or Eamon J. Wall at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

2/28/06

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